



THE ROLE OF TELENURSING IN INCREASING KNOWLEDGE AND PHYSICAL ACTIVITY OF BREAST CANCER PATIENTS

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ABSTRACT

Cancer is one of the leading causes of death worldwide. One type of Cancer which highly impact woman is breast cancer. Nowadays chemotherapy becomes the most advance therapy for cancer although it has a real impact in decreasing physical and psychological conditions of the patient. In order to improve their physical and psychological condition, mentoring or assistances is needed. In current developments, mentoring can be done directly or indirectly including by utilizing technology as known as Telenursing. This Quasi Experimental study was used a pretest-posttest with control group design. All breast cancer patients who were in a home stay around Semarang were involved in this study. There is a significant difference in knowledge before intervention and after intervention (p-value = 0.000). It can be concluded that mentoring by utilizing Telenursing has impact in increasing the knowledge of breast cancer patients about physical activity. There is a significant difference in the behavior before and after the intervention (p-value = 0.002).

Keywords: behavior; breast cancer; knowledge; physical activity; telenursing

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INTRODUCTION

Cancer is one of the leading causes of death worldwide. In 2012, there are 8.2 million of deaths caused by cancer. Cancer which is located in the Lung, liver, stomach, colorectal, and breast are the biggest causes of cancer deaths every year. In 2012, *International Agency for Research on Cancer (IARC)* state that there were 14,067,894 new cases of cancer and 8,201,575 cancer deaths worldwide. In Indonesia by 2013, the prevalence of cancer in all age was 347,792 people (1.4%).

Breast cancer is the most frequent type of cancer which impact women in the world. there are 1.7 million new cases and 521,900 deaths from breast cancer in 2012 (American Cancer Society, 2015). GLOBOCAN (2012) estimated the percentage the incidence of breast cancer is 43.3% and the deaths due to breast cancer is 12.9%. In Indonesia, the incidence of breast cancer is 40 cases of 100,000 women, this incidence is increased compared to 2002 which was only 26 cases of 100,000 women (Kemenkes RI, 2015). In Semarang during 2015, the number of cancer cases reached 1,202, then it was increased to 1,360 patients in 2016, 3,344 patients in 2017 and 4,286 in 2018 (DKK, 2019).

The most up to date which is rapidly developed is chemotherapy. Chemotherapy is a therapeutic action that injecting chemicals substance in cancer patients to prevent the spread of cancer cells. This treatment is only given to patient with tumors that are sensitive to

chemotherapy before and after surgery. Chemotherapy has a significant physical and psychological impact on cancer patients (Schwartz, Seymour, 2010). The effects of breast cancer diagnosis and treatment are often associated with psychological distress and reduced health-related quality of life (HRQoL). The most common side effects which are experienced by patients are nausea and vomiting which affect their physical activity, psychosocial health, spiritual and cause some physical symptoms such as pain.(Perwitasari et al., 2011).

Several studies explain that physical exercise performed on cancer patients has a positive effect on quality of life and fitness; thereby physical exercise can increase life expectancy (Darma et al., 2021). Experts develop and test the exercise programs to encourage cancer patients to participate in physical activity. Physical activity can increase spirit, improve quality of life and survival among patients with cancer. Several studies explain that the physical and psychological condition is decrease in patient with cancer. This fact shows that they will not be able to carry out physical activities activity and need physical activity assistance.

Nowadays, assistance can be carried out directly or indirectly or by utilizing technology (Asmirajanti, 2021). The use of technology in the health sector has led to the innovation in the provision of Telenursing nursing care. Telenursing allows the application of home care services in the form of websites, social media, telephones, mobile phones and interactive videos in. This method is quite interesting because patients are monitored by nurses and get access to services according to the need of every patient through long-distance communication. In Indonesia, the application of Telenursing has been carried out although there are still many limitations, including limited resources, facilities and infrastructure and the lack of support from the government. Considering the current technological advances, such as the use of the internet, computers and smartphones, there is potential to apply and develop Telenursing in order to meet the need for health services. In order to overcome the limitations of Telenursing the utilization of simple equipment such as telephone and smartphones which are already widely owned by the community but are still not widely used for the benefit of health/nursing services must be explored (Fadhila & Afriani, 2019). These conditions encourage researchers to conducting study on the use of technology (Telenursing) as assistance in increasing knowledge and behavior of breast cancer patients. The purpose of this study was to determine the effect of using telenursing on increasing knowledge and attitudes of physical activity of breast cancer patients

METHOD

This is a Quasi Experimental study was used a pretest-posttest with control group design. All breast cancer patients who were in a home stay around Semarang during 2021 were involved in this study. The samples were chosen by using non-probability sampling with a purposive sampling approach. Sample selections were determined by considering the characteristics of the subject as stated in the inclusion criteria. In order to determine the sample size the researcher uses the formula from Dahlan (2013). The standard deviation is 3.8 with a mean difference of $X_1 - X_2$ is 2.0 and it was determine by considering the study conducted by Mohammadpour, et al (2015). This study uses Confidence Interval = 95% ($\alpha < 0.05$) and 80% power test.

To avoid drop out, the sample size is added by 34 samples (10%). Inclusion criteria for the intervention group as well as the control group in this study is breast cancer patients who are undergoing treatment either surgery or radiation therapy or chemotherapy, age range 18-69 years, residing in a cancer homestay, can read and write and are willing to be respondents,

take pretest and posttest. The exclusion criteria in this study were unable to participate in all intervention programs, breast cancer patients with hearing and vision impairments, weak conditions and unable to participate in research activities. After the data was collected, the data was not normally distributed, so to analyze the difference between the pretest and posttest, the Wilcoxon Sign Rank Test was carried out and to analyze the difference in physical activity ability, the Mann-Whitney U Test was used. This study was conducted in January-March 2021 after obtaining permission to carry out the study.

RESULTS

Table 1.
Statistical Result of Knowledge and Attitudes before and after Intervention (n=30)

	Knowledge before and after intervention	Behavior before and after intervention
Asimp.sig tailed)	(2 0.000	0.002

Based on table 1, it is known that the significance value of knowledge is p-value = 0.000, which means that there is a significant difference in knowledge before intervention and after intervention. It can be concluded that there is an effect of mentoring by utilizing telenursing in increasing the knowledge of breast cancer patients about physical activity. While the significance value of the behavior is p-value = 0.002 means that there is a significant difference in the behavior before and after the intervention.

DISCUSSION

The result of the study shows that there are 30 respondents of cancer patients who were staying in the homestay around Semarang. It also shows that the frequency of physical activity before and after mentoring using Telenursing is increased. Before the intervention, respondents did not know how to comprehensively manage their activities so that the patients experienced fear of doing physical activity. This study is in line with previous study conducted by (Pratama et al., 2019) on the effect of Telenursing on self-care abilities in chronic patients, the study showed an increase in self-care abilities in chronic patients after mentoring through telenursing for the intervention group and there was no improvement in the patient's self-care ability for the control group. This is because the provision of intervention methods with Telenursing can increase patient motivation in the healing process so that patients are more motivated to be able to return to normal activities immediately. According to (Hartford, 2005) in his study on "Telenursing and Patients' Recovery from Bypass", the application of telecommunications technology in providing nursing services encourages patients to be able to learn how to take care for themselves. It also helps nurses to carry out health education and health promotion effectively which lead to the shortens of the length of treatment period.

Telenursing is the implementation of remote nursing care by utilizing advances in information technology, nurses who apply telenursing continue to assess, plan, intervene and evaluate the results of nursing care, but the difference with direct nursing care is that nurses provide it through advanced technology such as telephone, internet, computers, digital measuring instruments and other telenursing tools. (Uslu et al., 2019) In this study, the application of telenursing used telephones and smartphones owned by patients. This method of providing care not only reduces costs and facilitates access to care services, but also improves the relationship between patients and nurses (Javanmardi Fard et al., 2016). Consultation can be

done through an application that can be accessed via cellphone or smartphone. On smartphones there is a video call feature so that clients and families can communicate by seeing each other without having to meet in person (Asmirajanti, 2021). An article written by (Da Silva Schulz et al., 2020) state that cellphones with voice call features are used as tools to help heal surgical wounds. Another benefit of this consultation through a smartphone is that it allows the client or the client's family to actually get answers or information from experts so that they are not affected by myths or hoaxes. In this case, not only consultation but also the nurse will provide information to the family that has educational value.

The application of Telenursing helps patients and their families to actively participate in care, especially for *self-management* of chronic diseases. It allows nurses to provide accurate and up to date information and provide support in person (*online*). Continuity of care is enhanced by providing opportunities for frequent contact between health care providers for patients and families. This is in line with the results of a study (Yang et al., 2019) regarding the 'Role of Telenursing in the Management of Patients with Diabetes' study which shows that telenursing, as a useful tool for patient education and behavioral intervention which help diabetic patients to improve their glycemic control. Telenursing can reduce treatment costs, reduce hospital stays, increase the number of wider and more equitable coverage of nursing services, and improve the quality of home care services.

The purpose of telenursing is not to clarify the patient's medical diagnosis, but is more focused on providing information, support and knowledge of patients and families, so that patients are being motivated, patients and their families can take part in the treatment process, so that patients with chronic diseases can assist in self-management matters. Telenursing is not only beneficial for patients, with telenursing proven to help the role of nurses as care givers as an effort to improve the patient's quality of life. The application of telenursing provides nursing care services in the form of preventive and rehabilitative actions. (Uslu et al., 2019) Telenursing is very helpful in the interaction of nurses and patients with chronic diseases in providing care regardless of age and gender (Kotsani et al., 2018).

CONCLUSION

There is a difference in knowledge about physical activity of cancer patients before and after intervention. There is a difference in the behavior of physical activity of cancer patients before and after intervention. There is an effect of education with Telenursing as assistance on the knowledge and attitudes of breast cancer patients.

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